Preface

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Version 1.0

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1

Introducing the Motherboard

Describes features of the motherboard.

Go to ⇨ page 1

Chapter 2

Installing the Motherboard

Describes installation of motherboard components.

Go to ⇨ page 7

Chapter 3

Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ⇨ page 27

Chapter 4

Using the Motherboard Software

Describes the motherboard software

Go to ⇨ page 47

Chapter 5

Setting Up eJIFFY

Describes the eJIFFY setting up

Go to ⇨ page 51

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Trouble Shooting

Provides basic trouble shoot ing tips

Go to ⇨ page 61

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the H57H-M motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA1156 socket for Intel® Lynnfield/Clarkdale processors for high-end business or personal desktop markets.

This motherboard is based on Intel® H57 Express Chipset for best desktop platform solution. H57 is a single-chip, highly integrated, high performance Hyper-Threading peripheral controller, unmatched by any other single chip-device controller. This motherboard supports up to 16 GB*1 of system memory with dual channel DDR3 1333/1066*2 SDRAM. One PCI slot is supported, fully compliant with PCI rev 2.3 specification at 33MHz. High resolution graphics via one PCI Express slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 2.0. One PCI Express x4 slot is supported, fully compliant to the PCI Express Base Specification revision 2.0. In addition, one PCI Express x1 slot is support. It implements an EHCI compliant interface that provides fourteen USB 2.0 ports (eight USB ports and three USB 2.0 headers support additional six USB ports).

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including one VGA port, one DVI port, one HDMI port, one ESATA port, two LAN ports, eight USB ports, one optical SPDIFO port and audio jacks for microphone, line-in and 8-ch line-out.

In addition, this motherboard comes with an LED for debug, a power on button and a reset button. The processor can be overclocked when *CPU Over-clocking Func.* is set to *Enabled* in M.I.B.II (MB Intelligent BIOSII).

**1. Due to the DRAM maximum size (2 GB per dimm) at present, the memory maximum size we have tested is 8 GB per dimm.*

**2. Due to the limitation of AMD CPU spec, please refer to Memory QVL for more information.*

Feature

Processor

The motherboard uses an LGA1156 type of socket that carries the following features:

- Accommodates Intel® Lynnfield/Clarkdale processors
- Supports “Hyper-Threading” technology CPU

“Hyper-Threading” technology enables the operating system into thinking it’s hooked up to two processors, allowing two threads to be run in parallel, both on separate “logical” processors within the same physical processor.

Chipset

The Intel H57 Express Chipset is a single-chip with proven reliability and performance.

- One x16 PCI Express Gen2 ports each supporting up to 8 GB/s direction peak bandwidth
- Compliant with PCI Rev 2.3 interface at 33 MHz
- One PCI Express x4 slot compliant with PCI Express Base Specification revision 2.0
- Support PCI Express x1 slot
- Integrated SATA 3.0 Gb/s Host Controller
- Fourteen USB 2.0 ports supported
- Serial Peripheral Interface (SPI) support
- Enhanced DMA Controller, interrupt controller, and timer functions
- Integrated Graphics Support with PAVP 1.5
- Intel® High Definition Audio Controller

Memory

- Supports DDR3 1333/1066 DDR3 SDRAM with Dual-channel architecture
- Accommodates four unbuffered DIMMs
- Up to 4 GB per DIMM with maximum memory size up to 16 GB
- Supports 1 Gb, 2 Gb and 4 Gb DDR3 DRAM technologies for x8 and x16 devices (It is not recommended to use 512 Mb DDR3 memory device on this motherboard)

Audio

- 7.1+2 Channel High Definition Audio Codec
- Meets Microsoft WLP3.x (Windows Logo Program) audio requirements
- All DACs supports 44.1k/48k/96k/192kHz sample rate
- Software selectable 2.5V/3.2V/4.0V VREFOUT
- Direct Sound 3D. compatible
- Power Support: Digital: 3.3V; Analog: 5.0V

Onboard LAN

- Supports PCI Express™ 1.1
- Integrated 10/100/1000 transceiver
- Wake-on-LAN and remote wake-up support

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphic Interface
- One PCI Express x1 slot
- One PCI Express x4 slot
- One 32-bit PCI v2.3 compliant slot
- Six 7-pin SATA connectors

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- Two LAN port
- One VGA port
- One HDMI port
- One DVI port
- One ESATA port
- Eight USB ports
- One optical SPDIFO port
- Audio jacks for microphone, line-in and 8-ch line-out

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

1. Some hardware specifications and software items are subject to change without prior notice.

2. Due to chipset limitation, we recommend that motherboard be operated in the ambiance between 0 and 50 °C.

Specifications

CPU	•	LGA1156 socket for latest Intel® Lynnfield/Clarkdale processors
	•	Supports “Hyper-Threading” technology CPU
Chipset	•	Intel H57 Express Chipset
Memory	•	Dual-channel DDR3 memory architecture
	•	4 x 240-pin DDR3 DIMM sockets support up to 16 GB
	•	Supports 1333/1066 DDR3 SDRAM
Expansion Slots	•	1 x PCI Express Gen2 x16 slot
	•	1 x PCI Express x1 slot
	•	1 x PCI Express x4 slot
	•	1 x PCI slot
Storage	•	Supported by Intel H57 Express Chipset
	•	6 x Serial ATA 3.0 Gb/s Host Controllers
Audio	•	Realtek ALC892 8-Ch HD audio
Giga LAN	•	Realteck 8111DL
Rear Panel I/O	•	8 x USB ports
	•	1 x VGA port
	•	1 x DVI port
	•	1 x HDMI port
	•	1 x ESATA port
	•	2 x RJ45 LAN connector
	•	1 x Audio port (Line in, microphone in, 8-ch line out and optical SPDIF out))
Internal I/O Connectors & Headers	•	1 x 24-pin ATX Power Supply connector, 8-pin 12V connector
	•	6 x Serial ATA connectors
	•	3 x USB 2.0 headers support additional 6 USB ports
	•	1 x Front panel header
	•	1 x SPDIF out header
	•	1 x Front panel audio header
	•	1 x Reset button
	•	1 x Power button
	•	1 x Clear CMOS button
	•	CPU_FAN/SYS_FAN/PWR_FAN connectors
System BIOS	•	AMI BIOS with 64Mb SPI Flash ROM
	•	Supports Plug and Play, STR (S3) / STD (S4) , Hardware monitor, Multi Boot
	•	Audio, LAN, can be disabled in BIOS
	•	F11 hot key for boot up devices option
	•	Supports Watch dog, Over-Clocking
Form Factor	•	Micro ATX Size, 244mm x 244mm

Motherboard Components

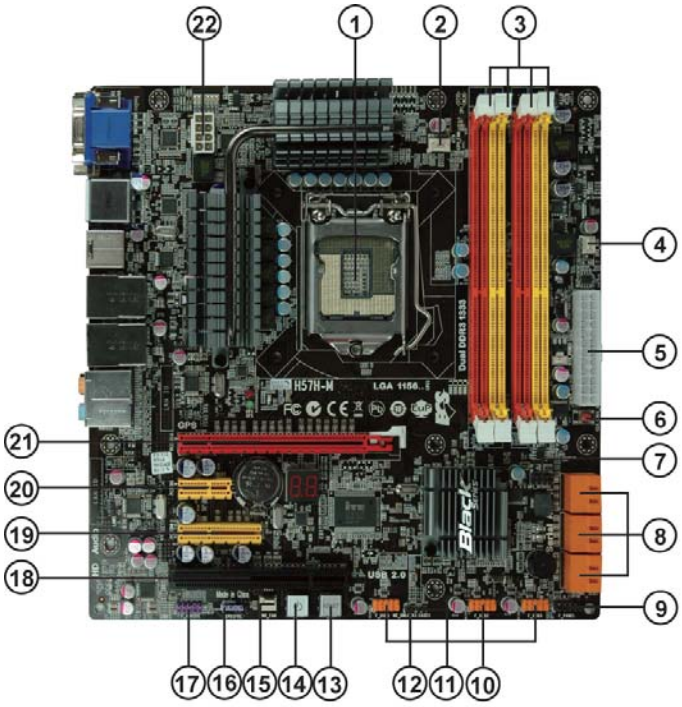


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	LGA1156 socket for Intel?Lynnfield/Clarkdale processors
2. CPU_FAN	CPU cooling fan connector
3. DIMM1~4	240-pin DDR3 SDRAM slots
4. SYS_FAN	System cooling fan connector
5. ATX_POWER	Standard 24-pin ATX power connector
6. CLR_CMOS_BTN	Clear CMOS button
7. SPI_DEBUG1	SPI debug header-for factory use only
8. SATA1~6	Serial ATA connectors
9. F_PANEL	Front panel switch/LED header
10. F_USB1~3	Front panel USB headers
11. CASE1	CASE open header
12. ME_UNLOCK1	ME unlock header-for factory use only
13. RST_BTN	Reset button
14. PWR_BTN	Power on button
15. PWR_FAN	Power cooling fan connector
16. SPDIFO1	SPDIF out header
17. F_AUDIO1	Front panel audio header
18. PCI1	32-bit add-on card slot
19. PCIEX4	PCI Express x4 slot
20. PCIEX1	PCI Express x1 slot
21. PCIEX16	PCI Express slot for graphics interface
22. ATX12V1	8-pin +12V power connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the micro ATX system case. Some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

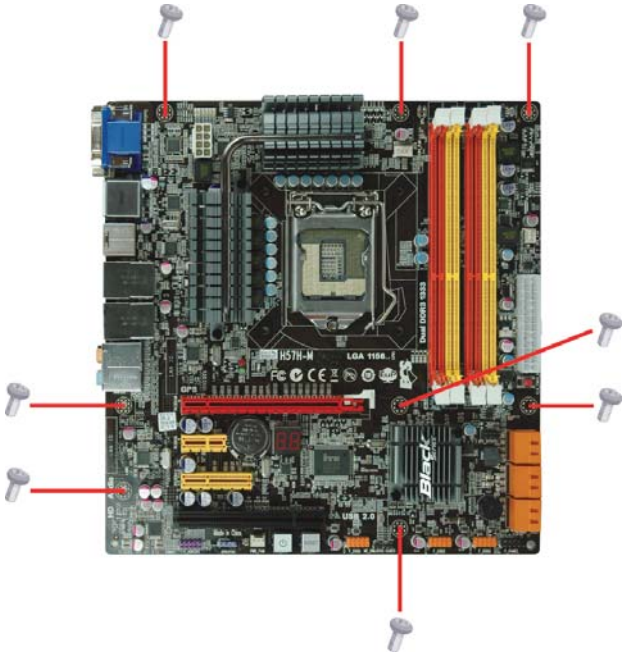
This motherboard carries a micro ATX form factor of 244 x 244 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking Jumper Settings

This section explains how to set jumpers for correct configuration of the motherboard.

Setting Jumpers

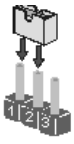
Use the motherboard jumpers to set system configuration options. Jumpers with more than one pin are numbered. When setting the jumpers, ensure that the jumper caps are placed on the correct pins.

The illustrations show a 2-pin jumper. When the jumper cap is placed on both pins, the jumper is SHORT. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is OPEN.

SHORT

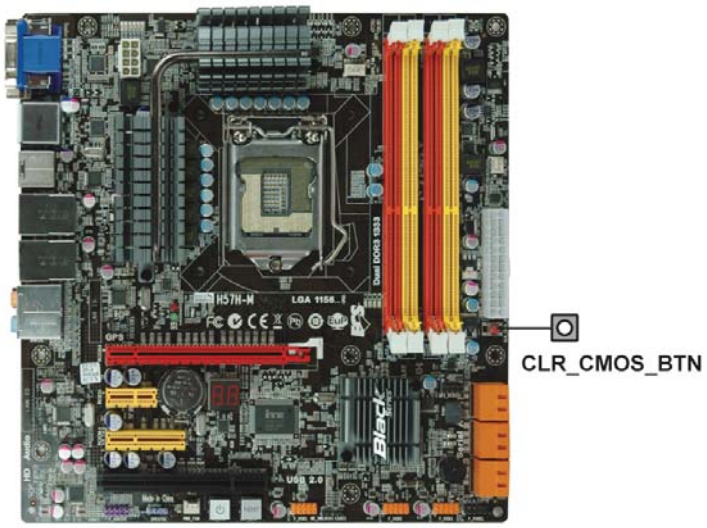
OPEN

This illustration shows a 3-pin jumper. Pins 1 and 2 are SHORT.



Checking Jumper Settings

The following illustration shows the location of the motherboard jumpers. Pin 1 is labeled.



Jumper Settings

Name	Type	Description	Setting (default)	
CLR_CMOS_BTN	button	CLEAR CMOS	NO PUSH: NORMAL PUSH: CLEAR Before clearing the CMOS, make sure to turn the system off.	**CLR_CMOS_BTN**

To avoid the system unstability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save Changes and Exit".

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.

Warning:

1. Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

2. Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

This motherboard has an LGA1156 socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

Fail-Safe Procedures for Over-clocking

When end-users encounter failure after attempting over-clocking, please take the following steps to recover from it.

1. Shut down the computer.

2. Press and hold the “Page Up Key (PgUp)” of the keyboard, and then boot the PC up.

3. Two seconds after the PC boots up, release the “Page Up Key (PgUp)”.

4. The BIOS returns to the default setting by itself.

CPU Installation Procedure

The following illustration shows CPU installation components.

A. Opening of the Load Plate
· Put your thumb on the tail of the load plate and press the tail down.
· Rotate the load plate to fully open position.

B. Disengaging of the Load Lever
· Hold the hook of lever and pull it to the left side to clear retention tab.
· Rotate the load lever to fully open position.

C. Removing the Cap
· Be careful not to touch the contact at any time.

D. Inserting the Package
· Grasp the package. Ensure to grasp on the edge of the substrate.
· Make sure pin 1 indicator is on your bottom-left side.
· Aim at the socket and place the package carefully into the socket by purely vertical motion.

E. Closing the Load Plate
· Rotate the load plate onto the package IHS (Intergraded Heat Spreader).
· Engage the load lever while pressing down lightly onto the load plate.
· Secure the load lever with the hook under retention tab.

F. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.

G. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.

1. To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/ heatsink supplied. The form and size of fan/heatsink may also vary.

2. DO NOT remove the CPU cap from the socket before installing a CPU.

3. Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with the cap on the LGA1156 socket.

Installing Memory Modules

This motherboard accommodates four memory modules. It can support four 240-pin DDR3 1333/1066. The total memory capacity is 16 GB.

DDR3 SDRAM memory module table

Memory module	Memory Bus
DDR3 1066	***533 MHz***
DDR3 1333	***667 MHz***

You must install at least one module in any of the four slots. Total memory capacity is 16 GB.

The four DDR3 memory sockets (DDR3_1, DDR3_2, DDR3_3 and DDR3_4) are divided into two channels and each channel has two memory sockets as following:

- Channel A: DDR3_1, DDR3_2
- Channel B: DDR3_3, DDR3_4

Recommend memory configuration

Mode	Sockets			
	DDR3_1	DDR3_2	DDR3_3	DDR3_4
2 DIMMs	-	Populated	-	Populated
3 DIMMs		Populated	Populated	Populated
3 DIMMs	Populated	Populated		Populated
4 DIMMs	Populated	Populated	Populated	Populated

Due to Intel CPU spec definition, the system will not boot if only one DIMM is installed in DDR3_1 or DDR3_3. Follow the table above for recommended memory configuration.

1. For best performance and compatibility, we recommend that users give priority to the yellow DIMMs (DDR3_2/DDR3_4) when installing DIMMs.

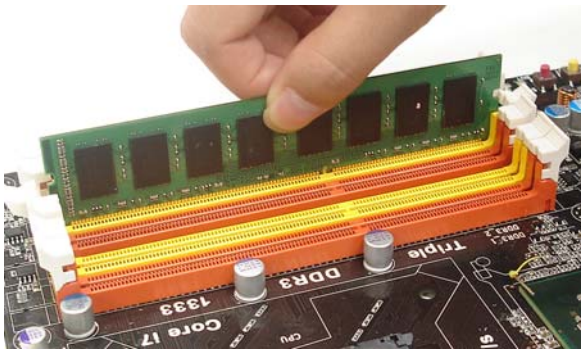
2. We suggest users not mix memory type. It is recommended to use the same brand and type memory on this motherboard.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1 This motherboard supports unbuffered DDR3 SDRAM .
2 Push the latches on each side of the DIMM slot down.
3 Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4 Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5 Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
6 Install any remaining DIMM modules.



** For reference only*

Table A: DDR3 (memory module) QVL (Qualified Vendor List)

The following DDR3 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR3 1066	1 GB	Hynix	HMT112U6AFP8C-G7N0 AA
		Kingston	KVR1066D3N7/1G
		Mcron	MT8JTF12864AY-1G1D1
			MT8JTF12864AZ-1G1F1
		Ramaxel	RMR1810NA48E7F-1066-LF
	2 GB	Elixir	M2Y2G64CB8HC9N-BE
			M2Y2G64CB8HC5N-BE
		Mcron	MT16JTF25664AY-1G1D1
			MT16JTF25664AZ-1G1F1
		Samsung	M378B5673DZ1-CF8 0842
DDR3 1333	1 GB	A-data	AD3U1333B1G9-B
		Elixir	J1108BDSE-DJ-F
		Hynix	HMT112U6AFP8C-H9N0 AA
		KingMax	FLFD45F-B8KG9 NAES
		Kingston	KVR1333D3N9/1G
		Mcron	MT8JTF12864AY-1G4D1
			MT8JTF12864AZ-1G4F1
		PSC	AL7F8G73D-DG1
		Ramaxel	RMR1810E7F-1333
			RMR1810KD48E7F-1333
		Samsung	M378B2873EH1-CH9
		Silicon Power	SP001GBLTU133S01

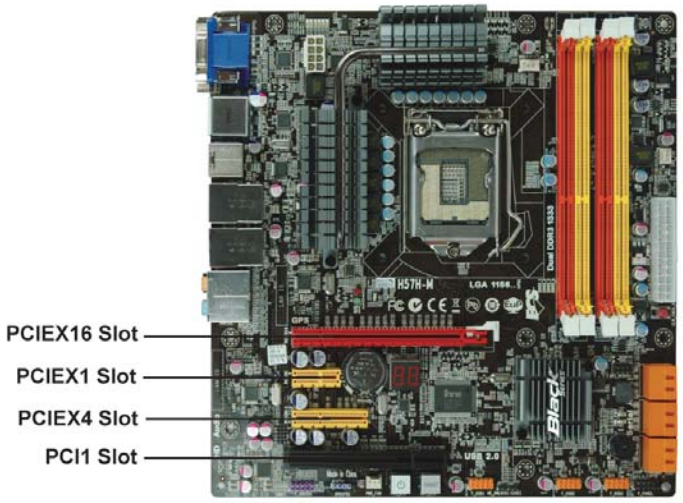
Table B: DDR3 (memory module) QVL (Qualified Vendor List)
The following DDR3 memory modules have been tested and qualified for use with this motherboard.

Type	Size	Vendor	Module Name
DDR3 1333	2 GB	A-data	AD3U1333B2G9-B
		Apacer	78.A1GC6.9L1
		Elixir	M2F2G64CB8HA4N-CG 0903.TW
			M2Y2G64CB8HA9N-CG 0920.TW
			M2Y2G64CB8HC9N-CG
		G.SKILL	F3-10666CL9D-4GBRL
			F3-10666CL8D-4GBECO
			F3-10666CL9D-4GBNQ
		Hynix	HMT125U6AFP8C-H9N0 AA
		KingMax	FLFE85F-B8KG9 NEES
		Micron	MT16JTF25664AY-1G4D1
		Nanya	NT2GC64B8HA0NF-CG 0917.TW
		PSC	AL8F8G73D-DG1/PSC
		Ramaxel	RMR186EA48D8F-1333
		Samsung	M378B5673EH1-CH9
		Silicon Power	SP002GBLTU133S01
	4GB	Kingston	KVR1333D3N9/4G
DDR3 1600	2GB	A-data	Fast fly dragon
		Elixir	M2Y2G64CB8HA9N-DG 0928.TWr
		G.SKILL	F3-12800CL9D-4GBNQ
			F3-12800CL9D-4GBECO
			F3-12800CL7D-4GBECO
			F3-12800CL9D-4GBRL

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCI1 Slot This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board are PCI v2.3 compliant.

PCIEX4 Slot The PCI Express x4 slot is fully compliant to the PCI Express Base Specification revision 2.0.

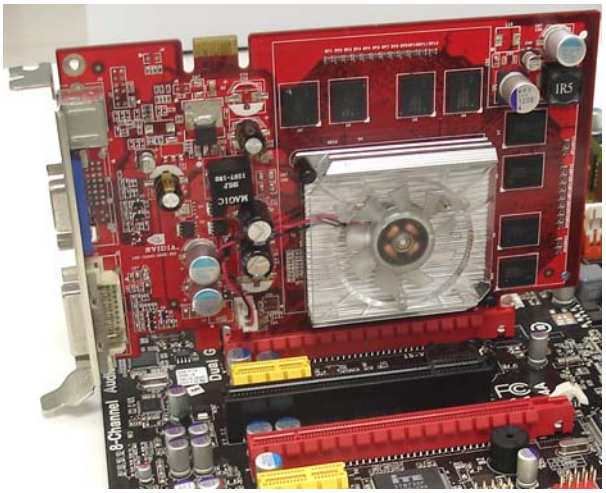
PCIEX1 Slot The PCI Express x1 slots are fully compliant to the PCI Express Base Specification revision 1.1.

PCIEX16 Slot The PCI Express x16 slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Base Specification revision 2.0.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

1 Remove a blanking plate from the system case corresponding to the slot you are going to use.
2 Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3 Secure the metal bracket of the card to the system case with a screw.

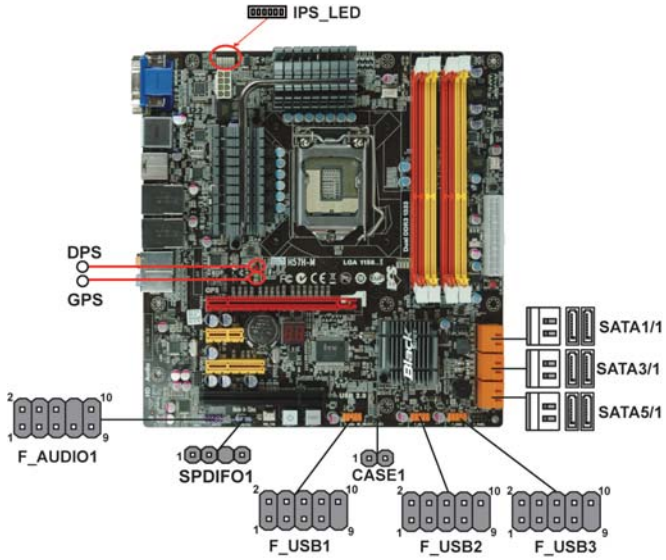


1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



F_AUDIO1: Front Panel Audio header

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	SENSE1_RETURN
7	SENSE_SEND	8	KEY
9	PORT 2L	10	SENSE2_RETURN

SATA1~6: Serial ATA connectors

These connectors are used to support the Serial ATA devices for the highest data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

F_USB1~3: Front Panel USB headers

The motherboard has six USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	USBOC-

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

SPDIFO1: SPDIF out header

This is an optional header that provides an SPDIFO (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name
1	+5V
2	NC
3	SPDIFOUT
4	GND

CASE1: Chassis Intrusion Detect Header

This detects if the chassis cover has been removed. This function needs a chassis equipped with instrusion detection switch and needs to be enabled in BIOS.

Pin 1-2	Function
Short	Chassis cover is removed
Open	Chassis cover is closed

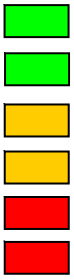
GPS/DPS: Graphics processor sensor/Discrete processor sensor

The GPS indicator LED shows if the installed CPU contains embedded graphics engine. When GPS LED is turned on, you may connect the display monitor directly to the mainboard's graphics port. (You may also choose to use a VGA adaptor card.)

In contrary, the DPS LED turns on if the CPU does not contain embedded graphics and thus require a VGA adaptor card to connect the display monitor.

IPS_LED: Intelligent Power Saving

IPS is an advanced power system that provides better energy efficiency for the processors. The energy canbe greatly saved during idle operation or other low load conditions which can be confirmed through IPS indicator LEDs.



Green: LIGHT LOAD 1

Green: LIGHT LOAD 2

Yellow: NORMAL LOAD 1

Yellow: NORMAL LOAD 2

Red: FULL LOAD 1

Red: FULL LOAD 2

Installing a SATA Hard Drive

This section describes how to install a SATA Hard Drive.

About SATA Connectors

Your motherboard features six SATA connectors supporting a total of six drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with a SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

SATA power cable (optional)

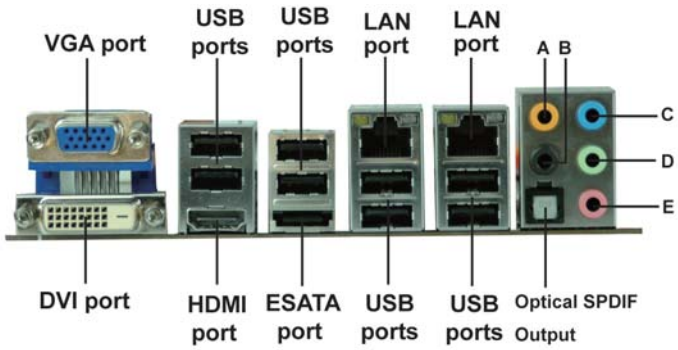
Refer to the illustration below for proper installation:

1. Attach either cable end to the connector on the motherboard.
2. Attach the other cable end to the SATA hard drive.
3. Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

This motherboard supports the "Hot-Plug" function.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



VGA Port Connect your monitor to the VGA port.

DVI Port Connect the DVI port to the monitor.

HDMI Port Connect the HDMI port to the HDMI devices.

ESATA Port Use these ports to connect to external SATA boxes or Serial ATA port multipliers.

LAN Port Connect an RJ-45 jack to the LAN port to connect your computer to the Network.

USB Ports Use the USB ports to connect USB devices.

Optical SPDIF Output This jack connects to external optical digital audio output devices.

Audio Ports Use the audio jacks to connect audio devices. The C port is for stereo line-in signal, while the E port is for microphone in signal. This motherboard supports audio devices that correspond to the A, B, and D port respectively. In addition, both of the 2 ports, B, and D provide users with both right & left channels individually. Users please refer to the following note for specific port function definition.

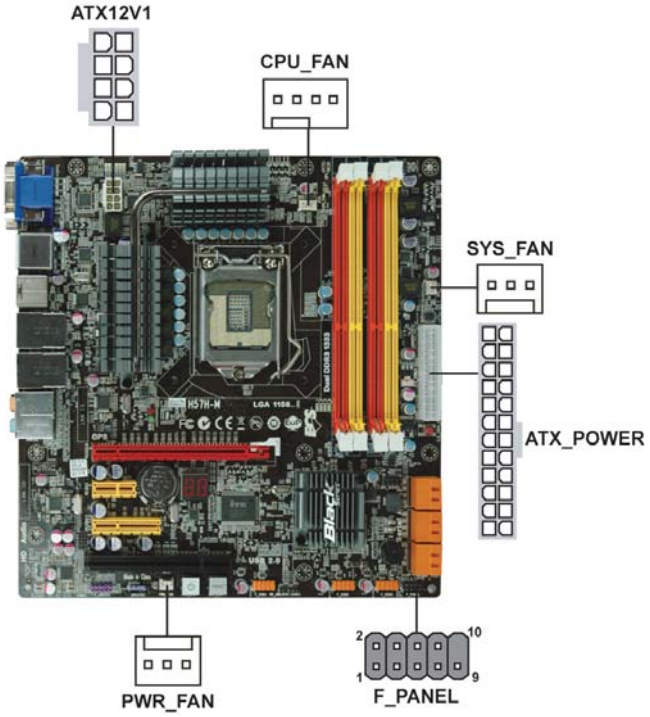
A: Center & Woofer	D: Front Out
B: Back Surround	E: Mic_in Rear
C: Line-in	-

The above port definition can be changed to audio input or audio output by changing the driver utility setting.

Connecting Case Components

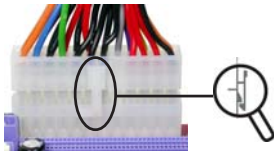
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1 Connect the CPU cooling fan cable to **CPU_FAN**.
2 Connect the standard power supply connector to **ATX_POWER**.
3 Connect the case switches and indicator LEDs to the **F_PANEL**.
4 Connect the system cooling fan connector to **SYS_FAN**.
5 Connect the auxiliary case power supply connector to **ATX12V1**.
6 Connect the power cooling fan connector to **PWR_FAN**.



Connecting 24-pin power cable

The ATX 24-pin connector allows you to connect to ATX v2.x power supply.

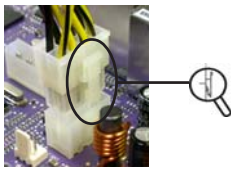


24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX1 match perfectly.

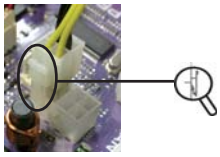
Connecting 8/4-pin power cable

Users please note that the 8-pin and 4-pin power cables can both be connected to the ATX12V connector.



8-pin power cable

When installing 8-pin power cable, the latches of power cable and the ATX12V connector match perfectly.



4-pin power cable

When installing 4-pin power cable, the latch falls on the left side of the ATX12V connector.

CPU_FAN: CPU cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	PWM

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

PWR_FAN/SYS_FAN: FAN Power Connectors

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

ATX_POWER: ATX 24-pin Power Connector

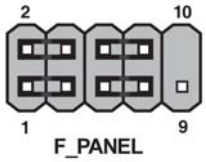
Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

ATX12V1: ATX 12V Power Connector

Pin	Signal Name	Pin	Signal Name
1	Ground	5	+12V
2	Ground	6	+12V
3	Ground	7	+12V
4	Ground	8	+12V

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or Micro ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED(+)	2	FP PWR/SLP	*MSG LED(+)
3	HD_LED_N	Hard disk LED(-)	4	FP PWR/SLP	*MSG LED(-)
5	RST_SW_N	Reset Switch(-)	6	PWR_SW_P	Power Switch(+)
7	RST_SW_P	Reset Switch(+)	8	PWR_SW_N	Power Switch(-)
9	RSVD	Reserved	10	Key	No pin

** MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pin 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

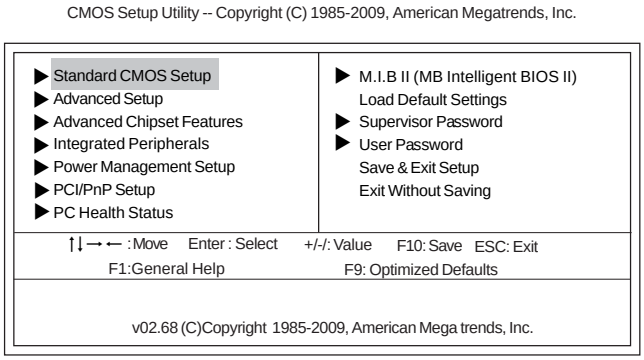
Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

Press DEL to enter SETUP

Press DEL to enter SETUP

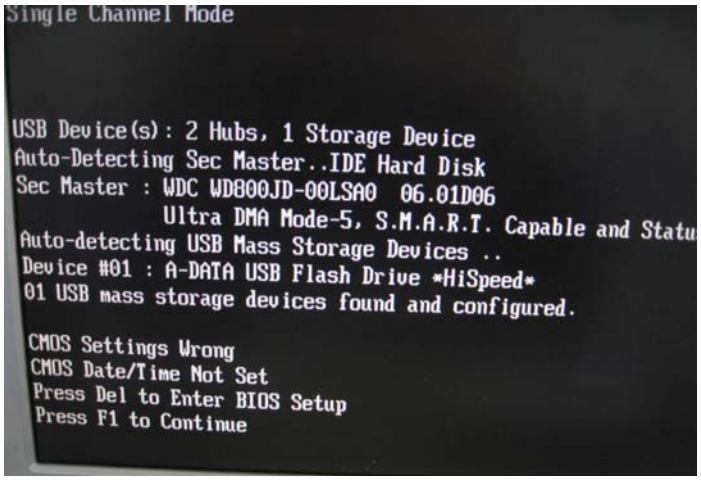
Press the delete key to access the BIOS Setup Utility.

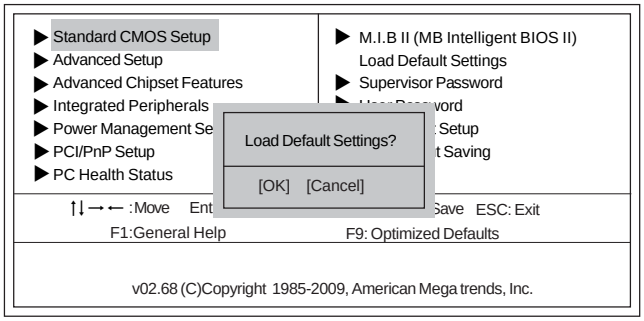

CMOS Setup Utility -- Copyright (C) 1985-2009, American Megatrends, Inc.
▶ Standard CMOS Setup
▶ Advanced Setup
▶ Advanced Chipset Features
▶ Integrated Peripherals
▶ Power Management Setup
▶ PCI/PnP Setup
▶ PC Health Status
▶ M.I.B II (MB Intelligent BIOS II)
Load Default Settings
▶ Supervisor Password
▶ User Password
Save & Exit Setup
Exit Without Saving
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults
v02.68 (C)Copyright 1985-2009, American Mega trends, Inc.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.

Note: Changes to system hardware such as different CPU, memories, etc. may also trigger this message.


Single Channel Mode
USB Device(s): 2 Hubs, 1 Storage Device
Auto-Detecting Sec Master..IDE Hard Disk
Sec Master : WDC WD800JD-00LSA0 06.01D06
Ultra DMA Mode-5, S.M.A.R.T. Capable and Statu
Auto-detecting USB Mass Storage Devices ..
Device #01 : A-DATA USB Flash Drive *HiSpeed*
01 USB mass storage devices found and configured.
CMOS Settings Wrong
CMOS Date/Time Not Set
Press Del to Enter BIOS Setup
Press F1 to Continue



Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

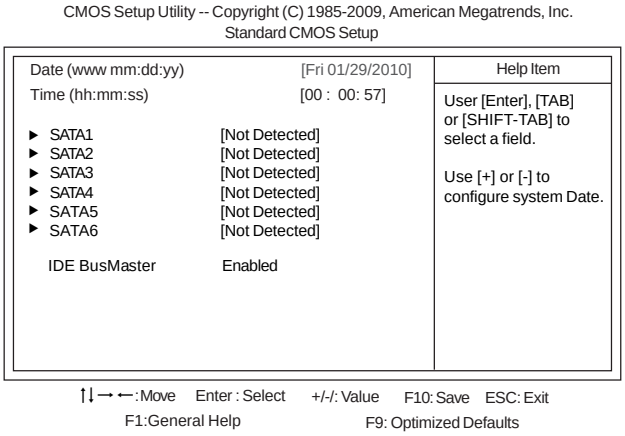
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-	Modifies the selected field's values
Enter	Select
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions

For the purpose of better product maintenance, we reserve the right to change the BIOS items presented in the manual. The BIOS setup screens shown in this chapter are for reference only. Please visit our website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

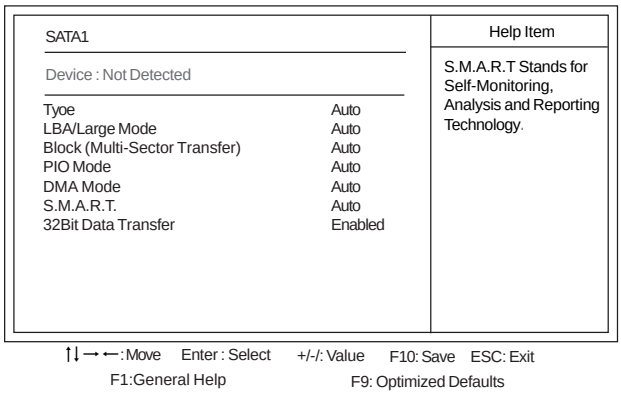

CMOS Setup Utility -- Copyright (C) 1985-2009, American Megatrends, Inc.
Standard CMOS Setup
Date (www mm:dd:yy) [Fri 01/29/2010]
Time (hh:mm:ss) [00 : 00: 57]
► SATA1 [Not Detected]
► SATA2 [Not Detected]
► SATA3 [Not Detected]
► SATA4 [Not Detected]
► SATA5 [Not Detected]
► SATA6 [Not Detected]
IDE BusMaster Enabled
Help Item
User [Enter], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

► SATA1~6

This motherboard supports six SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the IDE channel.


CMOS SETUP UTILITY – Copyright (C) 1985-2009, American Megatrends, Inc.
SATA1
SATA1
Device : Not Detected
Tyoe Auto
LBA/Large Mode Auto
Block (Multi-Sector Transfer) Auto
PIO Mode Auto
DMA Mode Auto
S.M.A.R.T. Auto
32Bit Data Transfer Enabled
Help Item
S.M.A.R.T Stands for Self-Monitoring, Analysis and Reporting Technology.
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Type (Auto)

Use this item to configure the type of the IDE device that you specify. If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

LBA/Large Mode (Auto)

Use this item to set the LBA/Large mode to enhance hard disk performance by optimizing the area the hard disk is visited each time.

Block (Multi-Sector Transfer) (Auto)

If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode (Auto)

DMA capability allows users to improve the transfer-speed and data-integrity for compatible IDE devices.

S.M.A.R.T. (Auto)

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

32Bit Data Transfer (Enabled)

Use this item to enable or disable 32Bit Data Transfer.

Press <Esc> to return to the Standard CMOS Setup page.

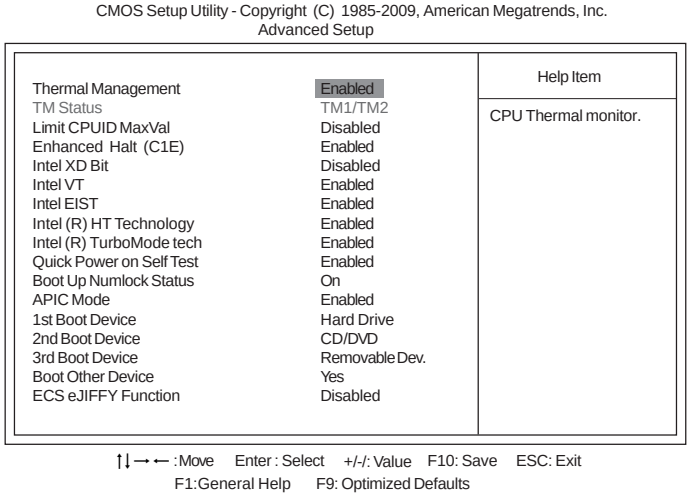
IDE BusMaster (Enabled)

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Advanced Setup
Thermal Management Enabled
TM Status TM1/TM2
Limit CPUID MaxVal Disabled
Enhanced Halt (C1E) Enabled
Intel XD Bit Disabled
Intel VT Enabled
Intel EIST Enabled
Intel (R) HT Technology Enabled
Intel (R) TurboMode tech Enabled
Quick Power on Self Test Enabled
Boot Up Numlock Status On
APIC Mode Enabled
1st Boot Device Hard Drive
2nd Boot Device CD/DVD
3rd Boot Device Removable Dev.
Boot Other Device Yes
ECS eJIFFY Function Disabled
Help Item
CPU Thermal monitor.
↑↓→←: Move Enter: Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Thermal Management (Enabled)

This item displays CPU's temperature and enables you to set a safe temperature to Prescott CPU.

TM Status (TM1/TM2)

This item displays CPU Monitor status.

Enhanced Halt (C1E) (Disabed)

This item enables or disables enhanced halt.

Limit CPUID MaxVal (Disabled)

Use this item to enable or disable the Max CPU ID value limit. When suppports Prescott and LGA775 CPUs, enable this to prevent the system from "rebooting" when trying to install Windows NT 4.0.

Enhanced Halt (C1E) (Enabled)

This item enables or disables enhanced halt (C1E).

Intel XD Bit (Disabled)

This item allows users to enable or disable the Intel XD bit.

Intel VT (Enabled)

When enabled, a VMM can utilize the additional hardware capabilities provided by Vandor Pool Technology.

Intel EIST (Enabled)

This item allows users to enable or disable the EIST (Enhanced Intel SpeedStep technology).

Intel (R) HT Technology (Enabled)

This item enables or disables Intel HT Technology support.

Intel (R) TurboMode tech (Enabled)

This item enables or disables Intel TurboMode Technology support.

Quick Power on Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Boot Up Numlock Status (ON)

This item defines if the keyboard Num Lock key is active when your system is started.

APIC Mode (Enabled)

This item allows you to enable or disable the APCI (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (Hard Drive/CD/DVD/Removable Dev.)

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

Boot Other Device (Yes)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

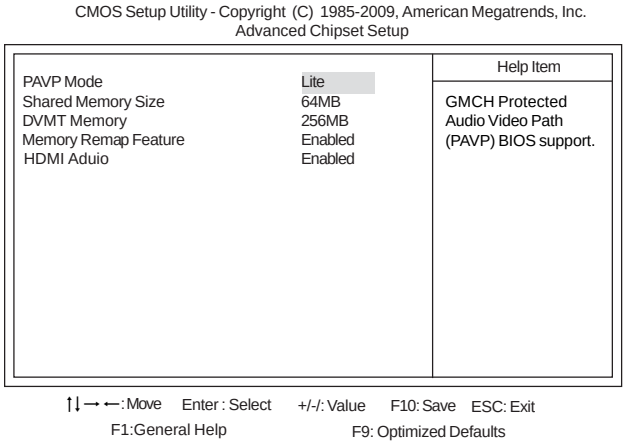
ECS eJIFFY Function (Disabled)

Use this item to enable or disable the ECS eJIFFY Function. eJIFFY is ECS unique software program for the quick access to the internet without entering O.S. Please refer to Chapter 5 to know more about eJIFFY.

Press <Esc> to return to the main menu setting page.

Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



PAVP Mode (Lite)

Integrated PeripheralsThis page sets up some parameters for peripheral devices connected to the system.Onboard SATA Mode (Enhanced)Use this item to select the mode of the Serial ATA.OnBoard LAN Function (Enabled)Use this item to enable or disable the onboard LAN function.This item allows you to select the PAVP (Protected Audio-Video Path) mode.PAVP supports secure playback of Intel HD Audio and Video content.

Share Memory Size (64MB)

This item lets you allocate a portion of the main memory for the onboard VGAdisplay application.

DVMT Memory (256MB)

When set to Fixed Mode, the graphics driver will reserve a fixed portion of thesystem memory as graphics memory, according to system and graphics requirements.

Memory Remap Feature (Enabled)

This item allows you to remap the overlapped PCI memory above the total physicalmemory if you have a 64 bit OS and 8 GB of RAM.

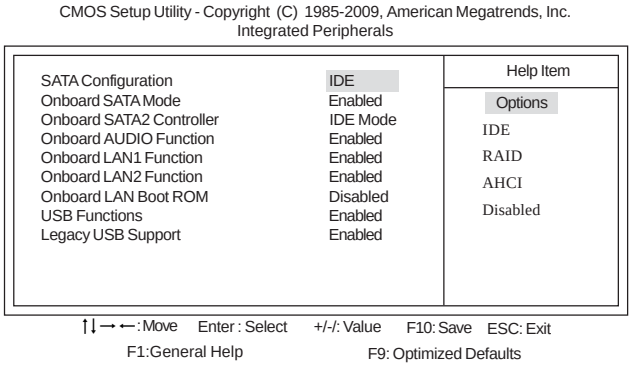
HDMI Audio (Enabled)

Use this item to enable or disable the HDMI Audio.

Press <Esc> to return to the main menu setting page.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.



SATA Configuration (IDE)

Use this item to show the Serial ATA Configuration options: IDE, RAID, AHCI or Disabled.

Onboard SATA Mode (AHCI)

Use this item to select the SATA mode.

Onboard SATA2 Controller (IDE Mode)

Use this item to select the mode of the Onboard SATA2 Controller.

OnBoard AUDIO Function (Enabled)

Use this item to enable or disable the onboard Audio function.

OnBoard LAN1 Function (Enabled)

Use this item to enable or disable the onboard LAN1 function.

OnBoard LAN2 Function (Enabled)

Use this item to enable or disable the onboard LAN2 function.

OnBoard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

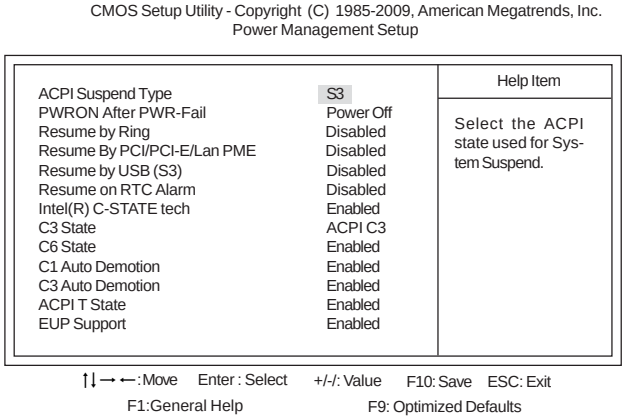
Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB devices. Setting to Auto allows the system to detect the presence of USB device at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled.

Press <Esc> to return to the main menu setting page.

Power Management Setup

This page sets up some parameters for system power management operation.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Power Management Setup
ACPI Suspend Type S3
PWRON After PWR-Fail Power Off
Resume by Ring Disabled
Resume By PCI/PCI-E/Lan PME Disabled
Resume by USB (S3) Disabled
Resume on RTC Alarm Disabled
Intel(R) C-STATE tech Enabled
C3 State ACPI C3
C6 State Enabled
C1 Auto Demotion Enabled
C3 Auto Demotion Enabled
ACPI T State Enabled
EUP Support Enabled
Help Item
Select the ACPI state used for System Suspend.
↑↓→←: Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

ACPI Suspend Type (S3)

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

PWRON After PWR-Fail (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Resume By Ring (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume if there is an incoming call on the Modem. You must use an ATX power supply in order to use this feature.

Power On by PCIE/PCI Devices (Disabled)

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Resume By USB (S3) (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3 mode.

Power On by RTC Alarm (Disabled)

This item can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system's RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Intel(R) C-STATE tech (Enabled)

C State: CPU idle is set to C2/C3/C4.

C3 State (ACPIC3)

Nehalem C state action select.

C6 State (Enabled)

Nehalem C state action select.

C1 Auto Demotion (Enabled)

When enable, CPU will conditionally demote C3/C6/C7 requests to C1 based onuncore auto-demote information.

C3 Auto Demotion (Enabled)

When enable, CPU will conditionally demote C6/C7 requests to C3 based on uncoreauto-demote information.

ACPI T State (Enabled)

Report processor throttling in ACPI

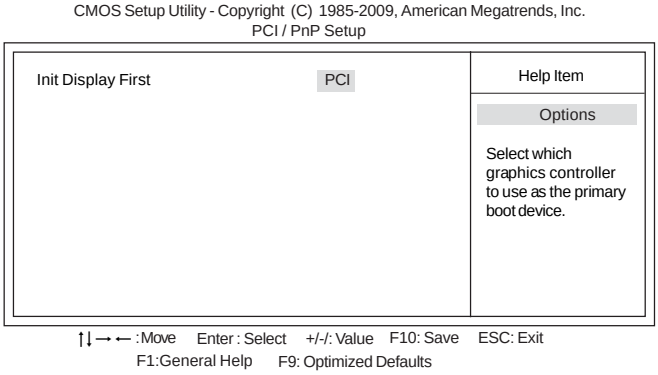
EUP Support (Enabled)

When enabled, system can not resume by some devices (PCI/PCIE/PME/Ring/RTC,etc) at S5 state. You can use this item to save power.

Press <Esc> to return to the main menu setting page.

PCI / PnP Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
PCI / PnP Setup
Init Display First
PCI
Help Item
Options
Select which graphics controller to use as the primary boot device.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

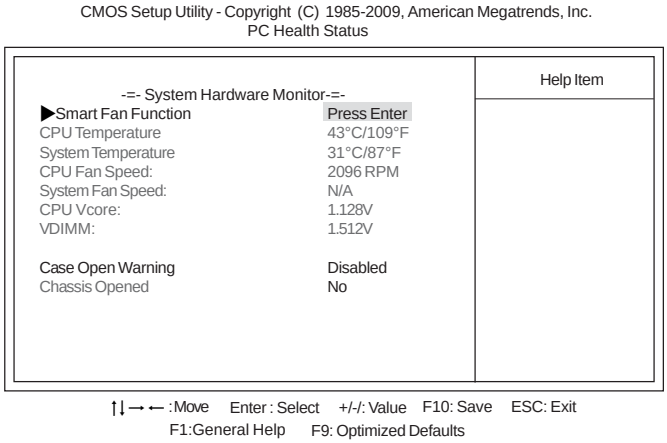
Init Display First (PCI)

Use this item to select which graphics controller to use as the primary boot devices.

Press <Esc> to return to the main menu setting page.

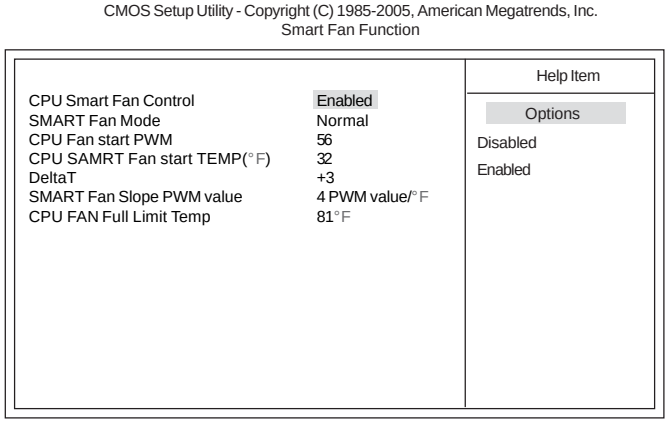
PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.



▶Smart Fan Function (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

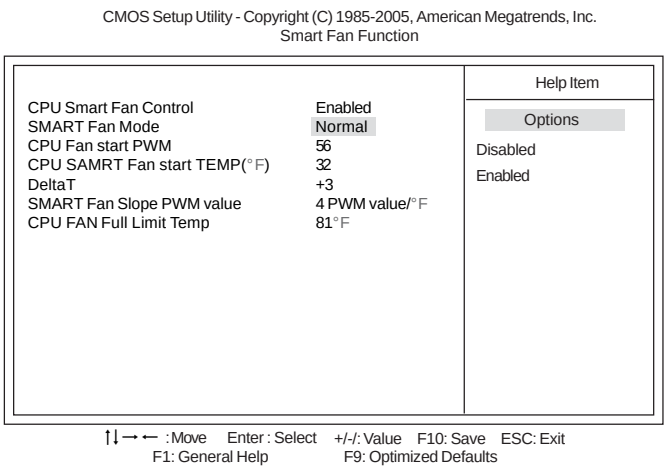


SMART Fan Control (Enabled)

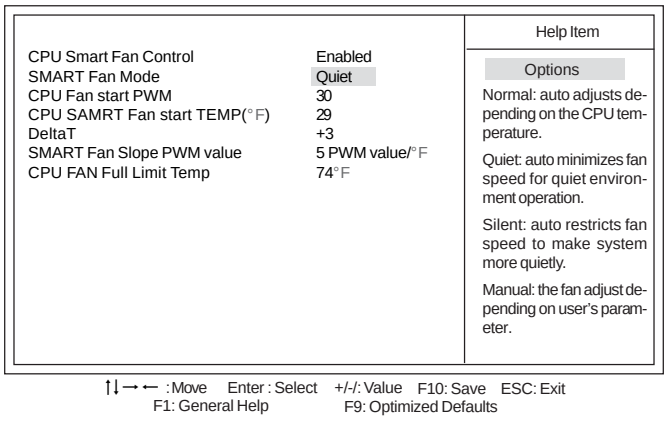
This item allows you to enable/disable the control of the CPU fan speed by changing the fan voltage.

SMART Fan Mode (Normal)

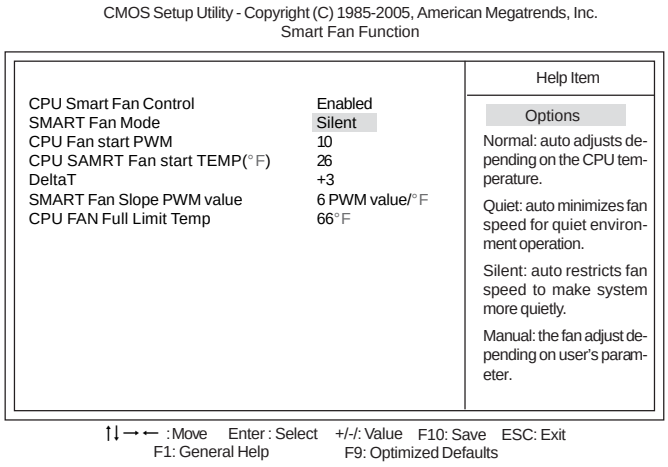
This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
Help Item
Options
Disabled
Enabled
CPU Smart Fan Control Enabled
SMART Fan Mode Normal
CPU Fan start PWM 56
CPU SAMRT Fan start TEMP(°F) 32
DeltaT +3
SMART Fan Slope PWM value 4 PWM value/°F
CPU FAN Full Limit Temp 81°F
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

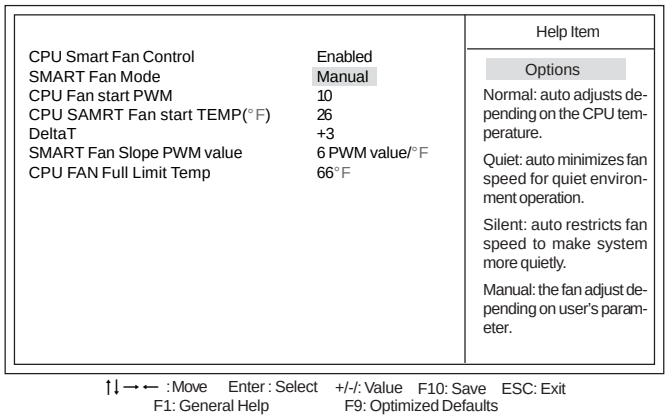
Press <Esc> to return to the Smart Fan Function page.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
Help Item
Options
Normal: auto adjusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
Silent: auto restricts fan speed to make system more quietly.
Manual: the fan adjust depending on user's parameter.
CPU Smart Fan Control Enabled
SMART Fan Mode Quiet
CPU Fan start PWM 30
CPU SAMRT Fan start TEMP(°F) 29
DeltaT +3
SMART Fan Slope PWM value 5 PWM value/°F
CPU FAN Full Limit Temp 74°F
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Press <Esc> to return to the Smart Fan Function page.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
CPU Smart Fan Control Enabled
SMART Fan Mode Silent
CPU Fan start PWM 10
CPU SAMRT Fan start TEMP(°F) 26
DeltaT +3
SMART Fan Slope PWM value 6 PWM value/°F
CPU FAN Full Limit Temp 66°F
Help Item
Options
Normal: auto adjusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
Silent: auto restricts fan speed to make system more quietly.
Manual: the fan adjust depending on user's parameter.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Press <Esc> to return to the Smart Fan Function page.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
CPU Smart Fan Control Enabled
SMART Fan Mode Manual
CPU Fan start PWM 10
CPU SAMRT Fan start TEMP(°F) 26
DeltaT +3
SMART Fan Slope PWM value 6 PWM value/°F
CPU FAN Full Limit Temp 66°F
Help Item
Options
Normal: auto adjusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
Silent: auto restricts fan speed to make system more quietly.
Manual: the fan adjust depending on user's parameter.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Press <Esc> to return to the Smart Fan Function page.

System Component Characteristics

These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,...etc.

- CPU Temperture
- System Temperture
- CPU Fan speed
- System Fan speed
- CPU Vcore
- VDIMM

Case Open Warning (Disabled)

This item enabled or disabled the warning if the case is opened up, and the item below indicates the current status of the case.

Chassis Opened (No)

This item indicates whether the case has been opened.

Press <Esc> to return to the Smart Fan Function page.

ECS supports the latest PECI host technology. While using Lynnfield CPU, the original images of the BIOS item "PC Health Status" and "Smart FAN Function" will be replaced by PECI mode and negative number. (The max data from PECI is zero.)

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
PC Health Status

		Help Item
-=- System Hardware Monitor-=-		
▶Smart Fan Function	Press Enter	
CPU Temperature	43°C/109°F	
System Temperature	31°C/87°F	
CPU Fan Speed:	2096 RPM	
System Fan Speed:	N/A	
CPU Vcore:	1.128V	
VDIMM:	1.512V	
Case Open Warning	Disabled	
Chassis Opened	No	

↑↓→←:Move Enter: Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function

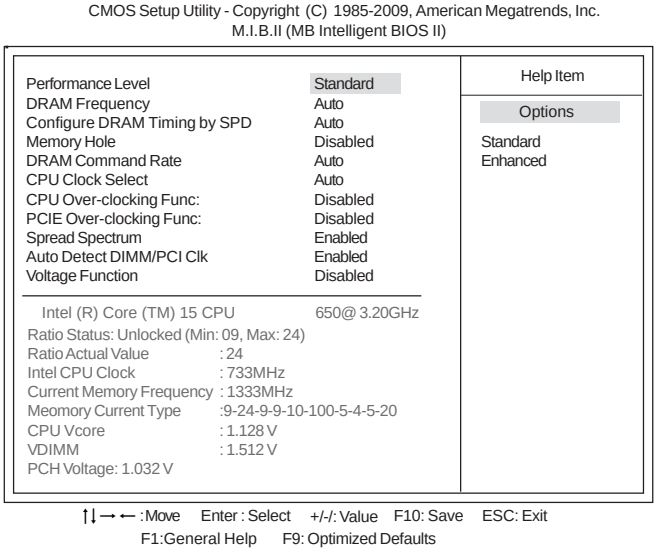
		Help Item
CPU Smart Fan Control	Enabled	Options
SMART Fan Mode	Normal	Disabled
CPU Fan start PWM	56	Enabled
CPU SAMRT Fan start TEMP(°F)	32	
DeltaT	+3	
SMART Fan Slope PWM value	4 PWM value/°F	
CPU FAN Full Limit Temp	81°F	

↑↓→←:Move Enter: Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Press <Esc> to return to the PC Health Status page.

M.I.B. II (MB Intelligent BiosII)

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
M.I.B.II (MB Intelligent BIOS II)
Performance Level Standard
DRAM Frequency Auto
Configure DRAM Timing by SPD Auto
Memory Hole Disabled
DRAM Command Rate Auto
CPU Clock Select Auto
CPU Over-clocking Func: Disabled
PCIE Over-clocking Func: Disabled
Spread Spectrum Enabled
Auto Detect DIMM/PCI Clk Enabled
Voltage Function Disabled
Intel (R) Core (TM) 15 CPU 650@ 3.20GHz
Ratio Status: Unlocked (Min: 09, Max: 24)
Ratio Actual Value : 24
Intel CPU Clock : 733MHz
Current Memory Frequency : 1333MHz
Meomory Current Type :9-24-9-9-10-100-5-4-5-20
CPU Vcore : 1.128 V
VDIMM : 1.512 V
PCH Voltage: 1.032 V
Help Item
Options
Standard
Enhanced
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Performance Level (Standard)

This item shows the performance level of the components, the options are: Standard and Enhanced.

DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

Configure DRAM Timing by SPD (Auto)

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.

Memory Hole (Disabled)

This item allows users to enable or disable memory hole remapping.

DRAM Command Rate (Auto)

This item specifies the rate of the DRAM Command.

CPU Clock Select (Auto)

This item allows users to select CPU clock.

CPU Over-clocking Func (Disabled)

This item decides the CPU over-clocking function installed in your system. If the over-clocking fails, please turn off the system power. And then, hold the PageUp key (similar to the Clear CMOS function) and turn on the power, the BIOS will recover the safe default.

PCIE Over-clocking Func (Disabled)

This item enables or disables the PCIE over-clocking function.

Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Voltage Function (Disabled)

Use this item to enable or disable the Voltage Function. If enable, users can increase the hardware voltage through BIOS settings.

Intel (R) Core (TM) 15 CPU 650 @ 3.20 GHz

This is display-only field and displays the information of the CPU installed in your computer.

Ratio Status: Unlocked (Min: 09, Max: 24)

These items show the locked/unlocked ratio status and the actual ratio of the CPU installed in your system.

Current Memory Frequency (1333MHz)

This item displays the current memory frequency.

Meomory Current Type (9-24-9-9-10-100-5-4-5-20)

These items show the information of the memory current type.

CPU Vcore (1.128 V)

This item displays the current CPU voltage.

VDIMM (1.512 V)

This item displays the current DIMM voltage.

PCH Voltage (1.152V)

This item allows users to adjust the PCH voltage.

Warning: Please pay attention that doing overvoltage may result in damage to hardware.

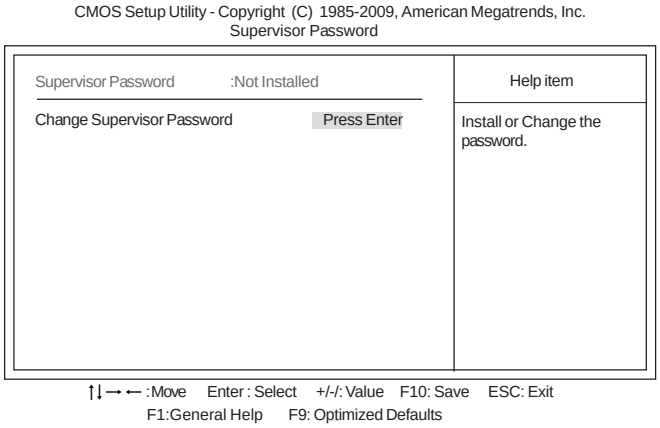
Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box to ask if you are sure to install optimized defaults or not. You select [OK], and then press <Enter>, the Setup Utility loads all default values; or select [Cancel], and then press <Enter>, the Setup Utility does not load default values.

Supervisor Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Supervisor Password
Supervisor Password :Not Installed
Change Supervisor Password
Press Enter
Help item
Install or Change the password.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

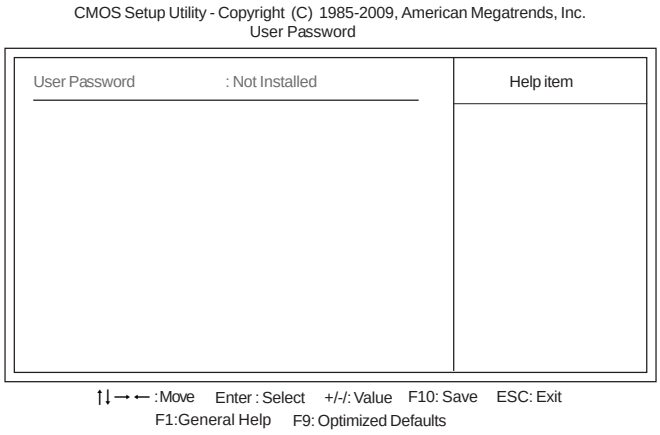
Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

User Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
User Password
User Password : Not Installed
Help item
↑↓→←: Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Press <Esc> to return to the main menu setting page.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

If you have made settings that you do not want to save, use the "Exit Without Saving" item and select [OK] to discard any changes you have made.

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. Create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
2. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the system diskette you created in Step 3.
3. Turn off your computer and insert the system diskette in your computer's diskette drive. (You might need to run the Setup Utility and change the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the floppy diskette drive first.)
4. At the A:\ prompt, type the Flash Utility program name and the file name of the new bios and then press <Enter>. Example: AMINF340.EXE 040706.ROM
5. When the installation is complete, remove the floppy diskette from the diskette drive and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4

Using the Motherboard Software

About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.

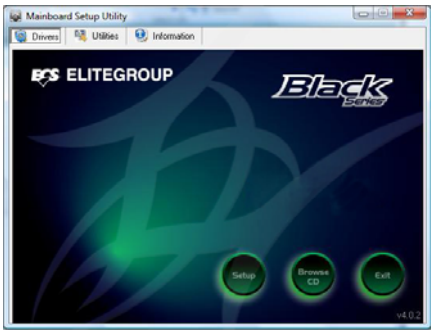
1. *Never try to install all software from folder that is not specified for use with your motherboard.*
2. *The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver disk . Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.*

Auto-installing under Windows XP/Vista/7

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disc loads automatically under Windows XP/Vista/7. When you insert the DVD-ROM/CD-ROM disc in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.



If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Drivers Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk. Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows XP/Vista/7. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **EXIT** button closes the Auto Setup window.

Utilities Tab

Lists the software utilities that are available on the disk.

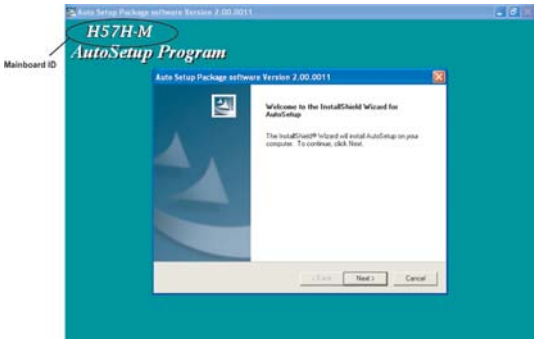
Information Tab

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

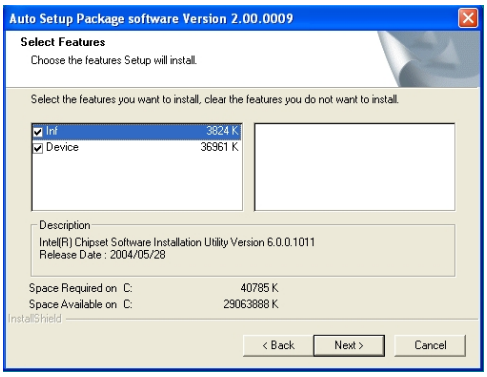
1. *Click **Setup.** The installation program begins:*



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

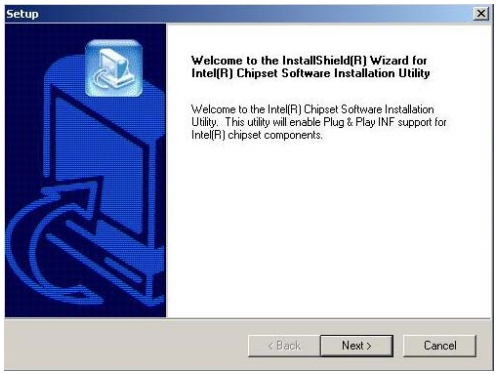
The motherboard identification is located in the upper left-hand corner.

2. *Click **Next.** The following screen appears:*


Auto Setup Package software Version 2.00.0009
Select Features
Choose the features Setup will install.
Select the features you want to install, clear the features you do not want to install.
Inf 3824 K
Device 36961 K
Description
Intel(R) Chipset Software Installation Utility Version 6.0.0.1011
Release Date : 2004/05/28
Space Required on C: 40785 K
Space Available on C: 29063888 K
InstallShield
< Back
Next >
Cancel

3. *Check the box next to the items you want to install. The default options are recommended.*

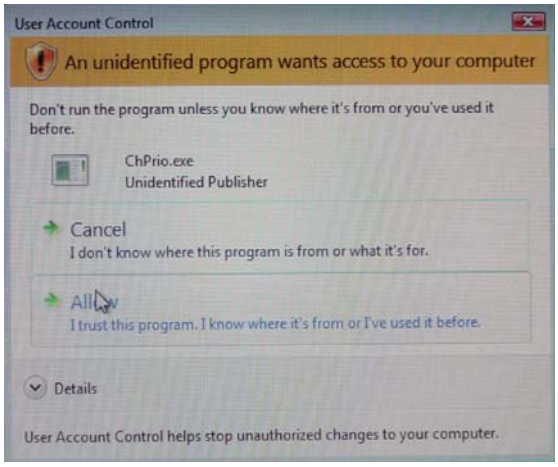
4. *Click **Next** run the Installation Wizard. An item installation screen appears:*


Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

5. *Follow the instructions on the screen to install the items.*

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Windows Vista/7 will appear below UAC (User Account Control) message after the system restart. You must select "Allow" to install the next driver. Continue this process to complete the drivers installation.


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
ChPrio.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

This concludes Chapter 4.

Chapter 5

Setting Up eJIFFY

Introduction

eJIFFY is a fast boot program under Linux. Instead of waiting Windows O.S to start execution, eJIFFY is ready to provide users the instant enjoyment on web browsing, photo review and online chat just within several seconds after boot up.

Note: eJIFFY is ECS ***optional*** feature utility corresponding to the DVD activation and BIOS setup. Please check the hard copy user's guide or product color-box to see if the model has embodded eJIFFY feature. (eJIFFY icon on color-box)

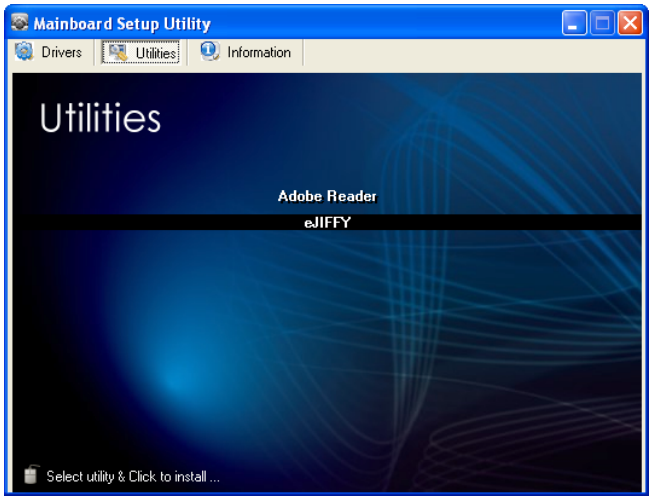
Version: 5.0

Installation and BIOS Setup

DVD Activation

Finish the DVD utility setup, and then set the BIOS to complete eJIFFY activation.

1. Insert ECS software utility DVD and enter below “Utilities” screen. Click eJIFFY feature item to install.



2. Follow the onscreen instructions to finish eJIFFY setup.

Setup - eJIFFY
Welcome to the eJIFFY Setup Wizard
This will install eJIFFY v1.1 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

3. After setting up eJIFFY under Windows, you can switch eJIFFY display/keyboard language from English to your local language. The changes will be applied after rebooting.

Note: The keyboard language selection list offers several more regional keyboard setups to switch with the default English typing. Please refer to the usage FAQ for more tips.

4. Restart your computer after eJIFFY installation. Press <DEL> or click the BIOS Setup button on the post screen to enter the BIOS setup page after boot up.

5. And then enter the *Advanced Setup* page to enable the item *ECS eJIFFY Function*. Press F10 to save the configuration and exit. Restart your computer.

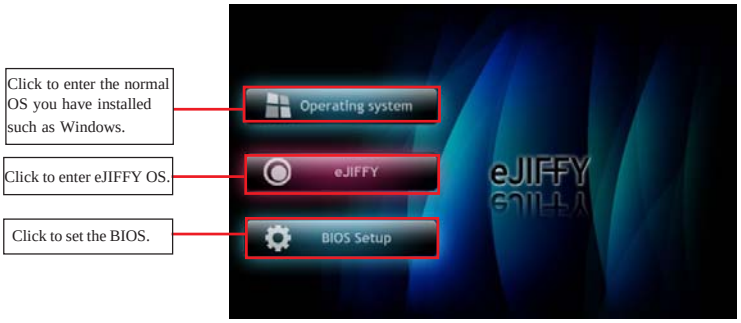
CMOS Setup Utility - Copyright (C) 1985-2007, American Megatrends, Inc.
Advanced Setup
HT Frequency Auto Auto
AMD C8Q Enabled
Quick Power on Self Test Enabled
Boot Up Numlock Status On
LOGO Display Enabled
APIC Mode Enabled
1st Boot Device ARY01 NVIDIA SPAN 1
2nd Boot Device CD/DVD
3rd Boot Device Removable Dev.
Hard Disk Drives Press Enter
Boot Other Device Yes
ECS eJIFFY Function Enabled
Restore Default Settings No
Help Item
Options
Disabled
Enabled
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Load Default Settings

Note: 1. eJIFFY is available in SATA/IDE/AHCI mode. It does not support RAID configuration and the onboard 34-pin floppy drives.

2. Please refer to ECS website for new eJIFFY application updates.

Entering eJIFFY

The post screen appears within several seconds after boot up and it has three buttons on it, Operating system, eJIFFY and BIOS Setup.


Click to enter the normal OS you have installed such as Windows.
Click to enter eJIFFY OS.
Click to set the BIOS.
Operating system
eJIFFY
BIOS Setup
eJIFFY

If you click eJIFFY, the following screen will appear. And If you make no choice it will enter the normal OS automatically after ten seconds.

Feature Icons

The following illustration shows the main feature icons that eJIFFY provides on the menu.

eWeb: Firefox for web browsing/webmail and watching flash video.

ePix: Photo viewing.

ePal: On-line chat tool to use the most popular IMs in the world. (MSN, ICQ, AIM, etc.)

Shows ePal on-line connection status.

Shut Down/Restart: Ends your session and turns off the computer./Ends your session and restart the computer..

Click once to connect the storage disk to your computer. Click for the second time to remove your storage disk safely. (please refer to the FAQ for more usage information.)

Shows the network connection status.

Language Control Panel

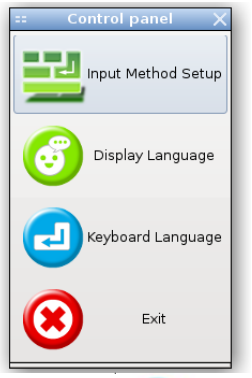
Switch Keyboard Languages

Usage FAQ

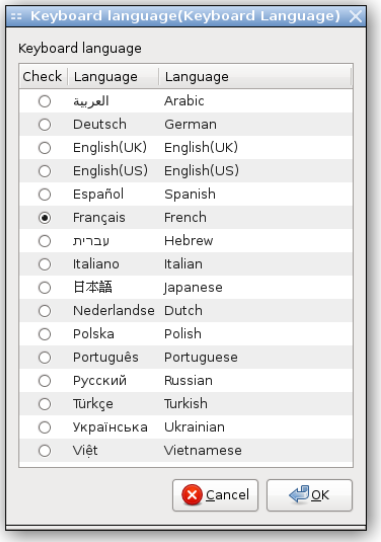
Language Control Panel: Besides setting English as the default interface, eJIFFY offers multi-language displays and keyboard settings for language-switch. Open the language control panel to select a preferable language setting.

Keyboard Language Setup

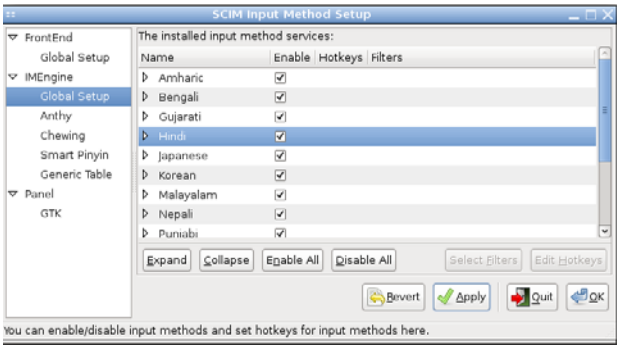
Step1. Click to open the language control panel.



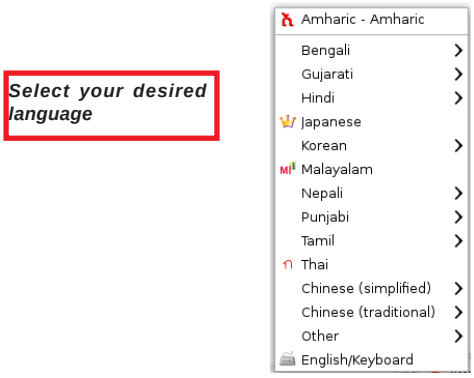
Step 2: Click “Keyboard Language” icon to open the keyboard selection list, which offers several regional keyboard settings besides default English keyboard.
Step 3: Click the selected keyboard language (e.g. French) and press “OK”.



Click to enable all possible language inputs you want to apply, and click "Apply":

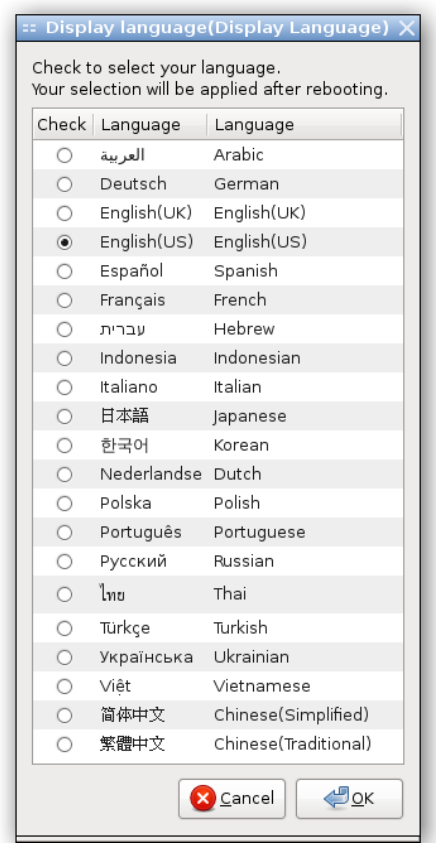


Move your mouse pointer on the text box and press Ctrl+Space. The language bar will then appear as follows.
Click the language bar here.



How to change display language?

Open the Language Control Panel and click to show the display language list. Check your desired display language. Your selected display language will be applied after rebooting.



Note: *Details about eJIFFY please refer to eJIFFY in disk.*

Memo

Chapter 6

Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1.Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.
2. Check the VGA adapter card (if applicable) is inserted properly.
3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous beeping: memory not detected
   b. 1 long beep and 2 short beeps looping : VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.
2. From the BIOS setting, try to enable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also enable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

4. Remove the hard drive, optical drive or DDR memory to determine which of these component may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.

2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.

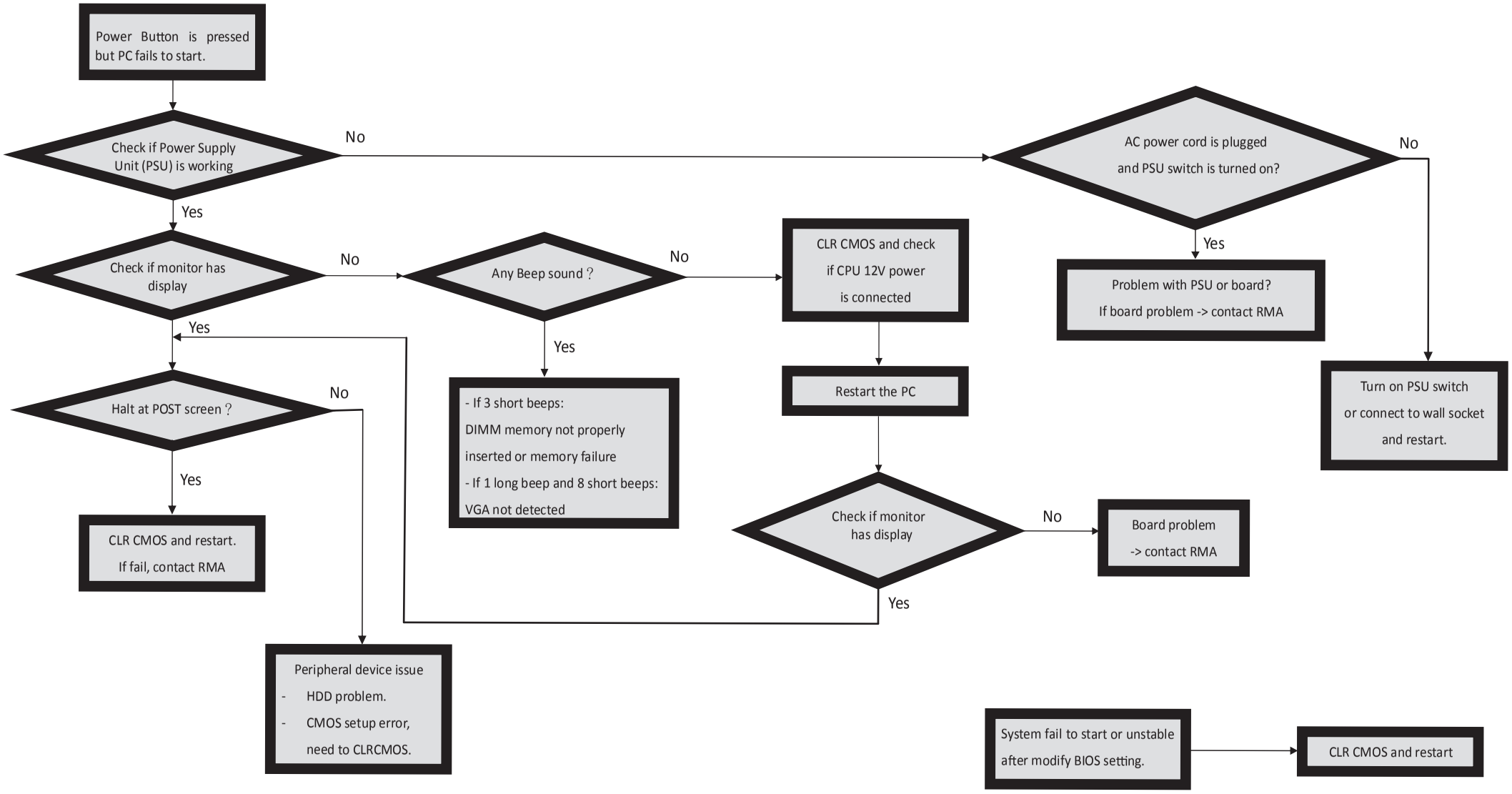
3. Routinely clean the CPU cooler fan to remove dust and hair.

4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.

5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.

6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Yes
Check if monitor has display
No
Any Beep sound ?
No
CLR CMOS and check if CPU 12V power is connected
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
Restart the PC
Yes
Halt at POST screen ?
No
Yes
CLR CMOS and restart. If fail, contact RMA
Check if monitor has display
No
Board problem -> contact RMA
Yes
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo